

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Nathaniel Quirk (Reg. No. 60,676) on February 15, 2011.

The application has been amended as follows:

IN THE CLAIMS:

1. An apparatus comprising a computing device, the computing device comprising a monitor and a determining unit;

the monitor being configured to monitor more than one parameter related to an active connection between a mobile station and a support node, wherein the support node is within a core network of a cellular communications network, and wherein said more than one parameter includes a parameter comprising an indication of user inactivity; and

the determining unit being configured to determine whether the connection between said support node and said mobile station is to be released based on the more than one parameter;

wherein the computing device is further configured to cause the connection between the mobile station and the support node to be established, and further configured to cause the connection to be released in an instance in which there is user inactivity for a predetermined period of time by:

causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection,

receiving a release command from the entity within the core network of the cellular communications network, and

in response to receiving the release command, causing a connection release message to be sent to the mobile station; and
wherein the apparatus is external to the core network of the cellular communications network.

4. The apparatus as claimed in claim 1, wherein said computing device is further configured to cause sending of a message to the support node indicating that said connection has been released.

6. The apparatus as claimed in claim 5, wherein the computing device is further configured to control the release of said connection.

8. The apparatus as claimed in claim 1, wherein said computing device is further configured to cause sending of a message to said support node advising that the connection has been released.

9. An apparatus comprising a computing device, the computing device comprising a monitor and a determining unit;

the monitor being configured to monitor more than one parameter related to an active connection between a mobile station and a support node, wherein the support node is within a core network of the cellular communications network, and wherein said more than one parameter includes a parameter comprising an indication of user inactivity based on an elapsed time since a last use of the connection; and

the determining unit being configured to determine whether the connection between said support node and said mobile station is to be released based on said more than one parameter monitored by said monitor,

wherein the computing device is further configured to cause the connection between the mobile station and the support node to be established, and further configured to cause the connection to be released in an instance in which the connection has not been used for a predetermined time by:

causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection,

receiving a release command from the entity within the core network of the cellular communications network, and

in response to receiving the release command, causing a connection release message to be sent to the mobile station; and

wherein the apparatus is external to the core network of the cellular communications network.

12. An apparatus comprising a computing device, the computing device comprising a monitor and a determining unit;

the monitor being configured to monitor more than one parameter related to an active connection between a mobile station and a support node, wherein the support node is within a core network of a cellular communications network, and wherein said more than one parameter includes a parameter comprising an indication of user inactivity based on a state of said mobile station; and

the determining unit being configured to determine whether the connection between said support node and said mobile station is to be released based on said at least one parameter monitored by said monitor,

wherein the computing device is further configured to cause the connection between the mobile station and the support node to be established, and further configured to cause the connection to be released based on the state of the mobile station by:

causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection,

receiving a release command from the entity within the core network of the cellular communications network, and

in response to receiving the release command, causing a connection release message to be sent to the mobile station; and

wherein the apparatus is external to the core network of the cellular communications network.

13. An apparatus comprising a computing device, the computing device comprising a monitor and a determining unit;

the monitor being configured to monitor more than one parameter related to an active connection between a mobile station and a support node, wherein the support node is within a core network of a cellular communications network, and wherein said more than one parameter includes a parameter comprising an indication of inactivity based on movement of the mobile station; and

the determining unit being configured to determine whether the connection between said support node and said mobile station is to be released based on said at least one parameter monitored by said monitor,

wherein the computing device is configured to cause the connection between the mobile station and the support node to be established, and further configured to cause the connection to be released based on the movement of the mobile station by:

causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection,

receiving a release command from the entity within the core network of the cellular communications network, and

in response to receiving the release command, causing a connection release message to be sent to the mobile station; and

wherein the apparatus is external to the core network of the cellular communications network.

16. An apparatus comprising a computing device, the computing device comprising a monitor and a determining unit;

the monitor being configured to monitor more than one parameter related to an active connection between a mobile station and a support node, wherein the support node is within a

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core network of a cellular communications network, and wherein said more than one parameter includes a parameter comprising an indication of inactivity based on a location of the mobile station; and

the determining unit being configured to determine whether the connection between said support node and said mobile station is to be released based on said at least one parameter monitored by said monitor,

wherein the computing device is configured to cause the connection between the mobile station and the support node to be established, and further configured to cause the connection to be released based on the location of the mobile station by:

causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection,

receiving a release command from the entity within the core network of the cellular communications network, and

in response to receiving the release command, causing a connection release message to be sent to the mobile station; and

wherein the apparatus is external to the core network of the cellular communications network.

97. A method, comprising:

monitoring more than one parameter related to an active connection between a mobile station and a support node, wherein the support node is within a core network of a cellular communications network, and wherein said at least one parameter comprising an indication of user inactivity;

determining, by a network entity that is external to the core network of the cellular communications network, whether the connection between said support node and said mobile station is to be released based on said more than one parameter, wherein the network entity comprises a computing device; and

causing the connection to be released based on said more than one parameter by:

causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection;

receiving a release command from the entity within the core network of the cellular communications network; and

in response to receiving the release command, causing a connection release message to be sent to the mobile station.

99. A method, comprising:

monitoring more than one parameter related to an active connection between a mobile station and a support node, wherein the support node is within a core network of a cellular communications network, and wherein said more than one parameter includes a parameter comprising an indication of user inactivity based on a state of said mobile station;

determining, by a network entity that is external to the core network of the cellular communications network, whether the connection between said support node and said mobile station is to be released based on said at least one parameter, wherein the network entity comprises a computing device; and

causing the connection to be released based on said at least one parameter by:

causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection;

receiving a release command from the entity within the core network of the cellular communications network, and

in response to receiving the release command, causing a connection release message to be sent to the mobile station.

102. The apparatus as claimed in claim 1, wherein said computing device is further configured to cause releasing of the connection between the support node and said mobile station dependent solely on the more than one parameter monitored by said monitor.

106. An apparatus comprising:

monitoring means for monitoring more than one parameter related to an active connection between a mobile station and a support node, wherein the support node is within a core network of a cellular communications network, said more than one parameter including a parameter comprising an indication of user inactivity based on an elapsed time since a last use of the connection; and

determining means for determining whether the connection between said support node and said mobile station is to be released based on said more than one parameter,

wherein the apparatus further comprises means for causing the connection between the mobile station and the support node to be established, and causing the connection to be released in an instance in which the connection has not been used for a predetermined time by:

causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection,

receiving a release command from the entity within the core network of the cellular communications network, and

in response to receiving the release command, causing a connection release message to be sent to the mobile station, and

wherein the apparatus is external to the core network of the cellular communications network.

107. An apparatus comprising:

monitoring means for monitoring more than one parameter related to an active connection between a mobile station and a support node, said more than one parameter including a parameter comprising an indication of user inactivity based on a state of said mobile station; and wherein the support node is within a core network of a cellular communications network,

determining means for determining whether the connection between said support node and said mobile station is to be released based on said more than one parameter,

wherein the apparatus further comprises means for causing the connection between the mobile station and the support node to be established, and causing the connection to be released based on the state of the mobile station by:

causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection,
receiving a release command from the entity within the core network of the cellular communications network, and
in response to receiving the release command, causing a connection release message to be sent to the mobile station; and
wherein the apparatus is external to the core network of the cellular communications network.

109. An apparatus comprising:
monitoring means for monitoring more than one parameter related to an active connection between a mobile station and an support node, wherein the support node is within a core network of a cellular communications network, said more than one parameter including a parameter comprising an indication of user inactivity based on a location of the mobile station; and

determining means for determining whether the connection between said support node and said mobile station is to be released based on said more than one parameter,

wherein the apparatus further comprises means for causing the connection between the mobile station and the support node to be established, and further configured to cause the connection to be released based on the location of the mobile station by:

causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection,
receiving a release command from the entity within the core network of the cellular communications network, and
in response to receiving the release command, causing a connection release message to be sent to the mobile station; and
wherein the apparatus is external to the core network of the cellular communications network.

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110. A non-transitory computer readable storage medium encoded with instructions that, if executed by a computer, perform a process, the process comprising:

- directing establishment of an active connection between a mobile station and a support node in a communication network through a radio network controller;

- monitoring, at the radio network controller, more than one parameter related to the connection between the mobile station and the support node, where the more than one parameter includes a parameter comprising an indication of a user inactivity;

- determining, at the radio network controller, whether the connection between said support node and said mobile station is to be released based on said more than one parameter; and

- directing releasing, by the radio network controller, of the connection between said support node and said mobile station based on said more than one parameter by:

 - causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection,

 - receiving a release command from the entity within the core network of the cellular communications network, and

 - in response to receiving the release command, causing a connection release message to be sent to the mobile station; and

- wherein the support node is within a core network of the cellular communications network, and

- wherein the radio network controller is external to the core network of the cellular communications network.

REASON FOR ALLOWANCE

Allowable Subject Matter

Claims 1, 4-6, 8-17, 19, 21-23, 77, 79-92, 96-100, 102, 103, 105-111, 113-119 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art of record, Lim, is an exemplary reference that closely approximates the applicant's invention. Lim discloses a method of managing radio resources and channel allocation, for instance, when there is no activity for a certain time period. However, Lim does not disclose an apparatus comprising a computing device, the computing device comprising a monitor and a determining unit; the monitor being configured to monitor more than one parameter related to an active connection between a mobile station and a support node, wherein the support node is within a core network of a cellular communications network, and wherein said more than one parameter includes a parameter comprising an indication of user inactivity; and the determining unit being configured to determine whether the connection between said support node and said mobile station is to be released based on the more than one parameter; wherein the computing device is further configured to cause the connection between the mobile station and the support node to be established, and further configured to cause the connection to be released in an instance in which there is user inactivity for a predetermined period of time by: causing transmission of a release message to an entity within the core network of the cellular communications network, the release message comprising an indication of the reason for releasing the connection, receiving a release command from the entity within the core network of the cellular communications network, and in response to receiving the release command, causing a connection release message to be sent to the mobile station; and wherein the apparatus is external to the core network of the cellular communications network.

Conclusion

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Joel Ajayi whose telephone number is (571) 270-1091. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Joel Ajayi/

Examiner, Art Unit 2617

/LESTER KINCAID/

Supervisory Patent Examiner, Art Unit 2617